Horse Feeding Management

Cold Weather Feeding Practices for Horses

Special management practices are required during the winter to ensure the health and proper body condition of your horse. This fact sheet will help you to develop feeding practices appropriate during cold weather.

The Impact of Cold Weather

During cold weather, the horse requires additional energy to maintain its internal body temperature and keep warm. The exact amount of energy depends on the severity and extent of the cold period. In the Carolinas, horses typically experience a dramatic drop in temperature for 1 to 3 days followed by a return to moderate, normal temperatures. When environmental temperatures (including wind chill) drop below 45°F (referred to as the *critical temperature*), significant amounts of energy are used by the horse to maintain its internal body heat.

The amount of energy required by the horse to meet daily energy needs is measured as digestible energy (DE) in calories. The critical temperature can be used to estimate increased energy needs which the horse must obtain from its diet. For each 1°F decrease below the critical temperature, the horse requires a 1% increase in digestible energy to maintain a consistent body temperature. Wind chill, moisture, and coat thickness will affect the critical temperature. The horse's thick winter coat has an insulating effect against cold and wind. If the coat becomes wet, the critical temperature will increase by 10 to 15°F.

The following formula is used to calculate the increased DE requirement for a horse as a result of cold temperatures and wet, windy conditions: *critical temperature – actual temperature = % increase in DE required.*

Adjusting Energy Intake: An Example

The following example clarifies how to adjust energy intake for a dry environmental temperature of 30°F with a wind chill that results in an actual temperature of 25°F. The example applies to a 1,100-pound horse at maintenance.

Step 1.
Subtract the actual temperature (including the wind-chill adjustment) from the critical temperature (accounting for wet conditions if necessary): 45°F – 25°F = 20% increase in DE requirements.

Step 2.
Because a 1,100-pound horse at maintenance requires 16.4 Mcal of DE per day (see AG-558-1) and because the horse in this example requires a 20% increase in DE, you multiply as follows: 16.4 Mcal x 20% = +3.28 Mcal increase. The requirement thus increases as follows: 16.4 Mcal + 3.28 Mcal = 19.68 Mcal DE/day.

Step 3.
Next you need to determine the amount of feed necessary to supply these increased calories. A 1,100-pound horse typically consumes 19 pounds of ration daily (1.7% of its body weight). Because the recommended DE level of the ration (concentrate mix plus forage) fed to a horse at maintenance is .90 Mcal DE/lb of feed, we can calculate the increase in feed as follows: 3.28 Mcal ÷ .90 Mcal = 3.64 pounds of additional feed to provide 19.68 Mcal DE/day.

Step 4.
Determine the total amount of feed the horse requires by adding the 3.64 pounds of additional feed to the 19 pounds of feed the horse requires under normal conditions: 19.0 + 3.64 = 22.64 pounds per day of total ration.

North Carolina Cooperative Extension Service
NORTH CAROLINA STATE UNIVERSITY
COLLEGE OF AGRICULTURE & LIFE SCIENCES